

REMARKS

Claims 1-13 are pending in this application, of which claims 6, 12, and 13 have been withdrawn from consideration.

Applicants have amended claims 3, 5, 8, and 10 to correct typographical errors. These changes do not introduce any new matter.

Applicants respectfully request reconsideration of the rejection of claims 1-5 and 9-11 under 35 U.S.C. § 102(b) as being anticipated by *Elspass et al.* ("*Elspass*") (International Publication No. WO 97/00910). As will be explained below, the *Elspass* reference does not disclose each and every feature specified in independent claim 1.

Applicants respectfully traverse the Examiner's characterization of the *Elspass* reference relative to the method defined in claim 1 for the following three reasons. First, Applicants respectfully disagree with the Examiner's assertion that the swelling agents disclosed in the *Elspass* reference constitute unambiguous disclosure of a "reactive emulsifying agent containing a functional group having affinity for the layered silicate" as specified in claim 1. The swelling agents disclosed in the *Elspass* reference are hydrocarbyl onium salts ($A^-M^+R^1R^2R^3R^4$ where A denotes an anion, M denotes N, S, or P, and R^1 to R^4 are hydrogen alkyl, aryl, or allyl groups). These swelling agents are types of the alkylammonium modifiers discussed in the background section of the subject application. More importantly, these swelling agents are not involved in the polymerization with initiator radicals because they do not have vinyl moiety in the molecular structure. Indeed, as stated in the *Elspass* reference, "[i]t will be readily appreciated that some of the above mentioned swelling agents are also emulsifying agents. However, in those instances when the swelling agent is not an emulsifying agent preferably an emulsifying agent will be employed in carrying out the polymerization. Optionally, of course, another emulsifying agent may be

used even when the swelling agent has emulsifying properties.” *Elspass* at page 3, lines 17-22. As such, Applicants respectfully submit that *Elspass* does not unambiguously disclose the use of a “reactive emulsifying agent containing a functional group having affinity for the layered silicate” as specified in claim 1.

Second, even if the emulsifying agent taught by *Elspass* is considered to be a “reactive emulsifying agent” as specified in claim 1 (a proposition with which Applicants disagree), Applicants respectfully submit that the *Elspass* reference still does not unambiguously disclose the use of a stabilizer as specified in step (b) of claim 1. In other words, Applicants respectfully submit that the Examiner is improperly using the emulsifying agent taught by *Elspass* to satisfy two different features specified in claim 1, namely the “reactive emulsifying agent” feature in step (a) and the “stabilizer” feature in step (b).

Third, the *Elspass* reference does not disclose polymerizations in the galleries of silicates. In emulsion or suspension systems involving polymer/silicate nanocomposites, polymerization will occur in 1) the aqueous phase, 2) soap micelles, and 3) galleries of silicates, and these polymerization loci will consume monomers competitively. The *Elspass* reference does not discuss in detail the structure of the nanocomposites (tactoid, intercalated, or exfoliated) during polymerization. In the subject invention, the reactive emulsifying agents penetrate into the galleries of silicates and attract monomers. Therefore, polymerization inside the galleries of silicates is facilitated. The method defined in claim 1 forms “exfoliated polymer/silicate nanocomposites.” In formulating the anticipation rejection, the Examiner has not articulated any reasoning that demonstrates that the method of *Elspass* would inevitably result in the formation of “exfoliated polymer/silicate nanocomposites” as specified in claim 1. In this regard, Applicants do not believe the use of silicates modified with alkyl ammoniums as shown by *Elspass* would inevitably result in the claimed structure because

they have found that such silicates do not sustain the colloidal stabilities, but instead precipitate to the bottom of reactors after the addition of the modifiers (e.g., onium materials).

Accordingly, for at least the foregoing reasons, independent claim 1 is patentable under 35 U.S.C. § 102(b) over *Elspass*. Claims 2-5 and 9-11, each of which ultimately depends from claim 1, are likewise patentable under 35 U.S.C. § 102(b) over *Elspass* for at least the same reasons set forth above regarding claim 1.

Applicants respectfully request reconsideration of the rejections of claims 7 and 8 under 35 U.S.C. § 103(a) as being unpatentable over 1) *Elspass* in view of *Whitton et al.* (U.S. Patent No. 5,863,975), and 2) *Elspass* in view of *Ozawa et al.* (U.S. Patent No. 5,369,166). Applicants have reviewed the *Whitton et al.* and *Ozawa et al.* references and respectfully submit that neither of these references cures the above-mentioned deficiencies of the *Elspass* reference relative to claim 1. Thus, the combination of *Elspass* in view of either *Whitton et al.* or *Ozawa et al.* does not raise a *prima facie* case of obviousness against the subject matter defined in claim 1. Claim 7 depends from claim 1 and claim 8 depends from claim 7. As such, for at least the same reasons set forth above regarding claim 1, the combination of *Elspass* in view of either *Whitton et al.* or *Ozawa et al.* does not raise a *prima facie* case of obviousness against the subject matter defined in claims 7 and 8. Accordingly, claims 7 and 8 are patentable under 35 U.S.C. § 103(a) over *Elspass* in view of either *Whitton et al.* or *Ozawa et al.*

In view of the foregoing, Applicants respectfully request reconsideration and reexamination of claims 1-5 and 7-11, as amended herein, and submit that these claims are in condition for allowance. Accordingly, a notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 749-6902. If any additional fees are due in

Application No. 09/990,103
Amendment dated March 29, 2004
Response to Office Action mailed October 28, 2003

connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. ASIAP112).

Respectfully submitted,
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A handwritten signature in black ink, appearing to read 'P. Martine', with a long horizontal flourish extending to the right.

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